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News Release
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Direct Current-Powering Demonstrates Significant Reduction in Data Center Energy Use

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Berkeley, CA—Data centers are the backbone of the Information Age, providing data storage for websites and databases, and supporting virtually every larger-sized private corporation and institution. Data centers can use 100 times more electricity than a typical office building (on a square foot basis), so energy costs are a major concern.

With financial support from the California Energy Commission, researchers at the Lawrence Berkeley National Laboratory (Berkeley Lab) have teamed with Silicon Valley giants including Sun, Intel, Cisco, and many other industry partners, to demonstrate technologies that have the potential to reduce the operating cost of data centers by billions of dollars a year, while maintaining or even improving reliability, lengthening the life of servers, and saving energy.

The strategy involves eliminating a significant amount of the electrical power lost in traditional data centers through multiple AC and DC conversion steps at today's data centers. By distributing DC (direct current) instead of AC (alternating current—from the electricity grid) throughout the data center, electrical power losses are reduced, as are the parts needed for conversion. In addition to energy savings, DC distribution reduces facility cooling needs, cuts floorspace demand, and increases reliability. The seamless integration of solar, wind or any other renewable power source at the site is an added benefit of this new DC architecture.

More information on DC-powering of data centers:
http://hightech.lbl.gov/dc-powering/about.html

http://www.energy.ca.gov/releases/2002_releases/2002-03-01_server_farms_nr.html

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